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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,812	11/02/2001	Shigefumi Odaohhara	JP920000347US1	7365

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EXAMINER	
AMIN, NIRAV S	
ART UNIT	**PAPER NUMBER**
2115	

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/015,812	ODAOHHARA, SHIGEFUMI	
	Examiner	Art Unit	
	Nirav Amin	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US Patent no. 6,542,846) herein after referred to as Miller in view of Rhoads et al. (US Patent No. 6,540,685) herein after referred to as Rhoads.

As per claim 5, Miller discloses a battery pack which is attached to an electric equipment [Column 3, lines 12-15], comprising: an outer wall sensor for detecting the temperature in proximity to a predetermined location on said cover [Column 4, lines 8-12]; a memory capable of storing predetermined relations between the temperatures detected by said outer wall sensor and a plurality of temperature rise suppressing measures [Column 8, lines 32-38]; a process determination logic capable of determining a temperature rise suppressing measure from the temperature detected from said out wall sensor, according to the relations stored in memory [Column 4, lines 46-51]; and an output logic capable of outputting to said electric equipment commands for initiating the temperature rise suppressing actions determined by said process determination logic [Column 3, lines 49-54]. Miller does not expressly disclose a cover forming a part of the outer wall of said electric equipment when said battery pack is attached to said electric equipment. Rhoads discloses a battery pack [Figure 8(79), Column 9, lines 38-39]

which is attached to an electric equipment, comprising a cover [Figure 8(81), Column 9, line 39] forming a part of the outer wall of said electric equipment when said battery pack is attached to said electric equipment for the benefit of maintaining the battery within the battery well [Column 9, lines 40-41]. At the time of the invention it would have been obvious to a person of ordinary skill in the art to include a cover as taught by Rhoads forming a part of the outer wall of the ultrasound system in the battery pack taught by Miller. The motivation for doing so would have been the benefit of maintaining the battery within the battery well [Column 9, lines 40-41].

As per claim 6, Miller discloses an internal temperature detecting sensor [Column 4, lines 32-33] for detecting the temperature at a predetermined location in said battery pack, wherein including the conditions for the temperature detected by said internal temperature detecting sensor as conditions different from the conditions for the temperature detected by said outer wall sensor, said memory predetermines and stores the relations between the conditions for these temperatures and the plurality of temperature rise suppressing measures [Column 8, lines 32-38].

As per claim 7, Miller discloses a battery pack wherein said predetermined location for which temperature is detected by said internal temperature detecting sensor is a protection circuit [Column 7, lines 8-13].

As per claim 8, Miller discloses an ultrasound system constructed so that a battery pack for power supply can be attached to the system unit thereof [Column 3, lines 12-15], wherein said battery pack comprises: a temperature detector for detecting the temperature in proximity to a predetermined location on said cover forming a part of

said outer wall [Column 4, lines 8-12]; an operation level selector for selecting a level of operation in said computer system according to the temperature detected by said temperature detector [Column 4, lines 46-51]; and a transmitter for transmitting information on the level of operation selected by said operation level selector to said system unit, and said system unit operates according to said information transmitted from said battery pack [Column 3, lines 49-54]. Miller does not expressly disclose a cover forming a part of the outer wall in the ultrasound system when said battery pack is attached to the ultrasound system. Rhoads discloses a cover [Figure 8(81), Column 9, line 39] forming a part of the outer wall of the ultrasound system when the battery pack is attached to the ultrasound system for the benefit of maintaining the battery within the battery well [Column 9, lines 40-41]. At the time of the invention it would have been obvious to a person of ordinary skill in the art to include a cover as taught by Rhoads forming a part of the outer wall of the ultrasound system in the battery pack taught by Miller. The motivation for doing so would have been the benefit of maintaining the battery within the battery well [Column 9, lines 40-41].

As per claim 9, Miller discloses the ultrasound system, wherein said system unit includes a CPU [Figure 4 (72), Column 8, lines 40-45] which functions as a brain of said ultrasound system, and said operation level selector selects a first state for decreasing the clock frequency of said CPU and a second state for intermittently operating said CPU as said level of operation [Column 5, lines 29-36].

Claims 1-4 and 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Bauer et al. (EP 448,755 A1) herein after referred to as Bauer.

As per claim 1, Miller discloses a battery connected to an ultrasound system for supplying power to said ultrasound system [Figure 4 (30), Column 2, lines 55-62], comprising: a first sensor provided at a first location in said battery for detecting temperature [Column 4, lines 32-34]; Miller does not disclose expressly a second sensor provided at a second location different from said first location in said battery for detecting temperatures. Bauer discloses a second sensor provided at a second location different from said first location in said battery for detecting temperatures [Figure 2 (67), (77) Column 4, lines 7-10, and 17-18] to provide a battery pack which includes electronic circuitry which draws minimal average power to monitor battery parameters [Column 1, lines 40-43]. Miller discloses outputting information [Column 4, lines 46-51] on the action to be implemented by said computer system to said computer system according to the temperature detected by said first sensor, however does not expressly disclose the use of a CPU for outputting the information. Bauer discloses a CPU for outputting information [Column 2, lines 12-13] to provide a battery pack, which includes electronic circuitry which draws minimal average power to monitor battery parameters [Column 1, lines 40-43]. Miller and Bauer are analogous art because they are from the same field of endeavor of controlling battery temperature. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a second temperature sensor and a CPU as taught by Bauer inside the battery pack. The motivation for doing so would have been to provide a battery pack which

includes electronic circuitry which draws minimal average power to monitor battery parameters [Column 1, lines 40-43].

As per claim 10, Miller discloses an ultrasound system constructed so that a battery pack for power supply can be attached to the system unit thereof [Column 3, lines 12-16], comprising: a measure selector for selecting the temperature rise suppressing measure of a specific stage from the temperature rise suppressing measures of a plurality of stages [Column 4, lines 46-51], according to each temperature detected by said plurality of temperature detectors; a suppressing measure implementing logic for implementing the temperature rise suppressing measure selected by said measure selector [Column 3, lines 49-54]. Miller does not disclose expressly a plurality of temperature detectors provided for a plurality of locations in said battery pack. Bauer discloses a plurality of temperature detectors provided for a plurality of locations in said battery pack [Figure 2 (67), (77) Column 4, lines 7-10 and 17-18] to provide a battery pack which includes electronic circuitry which draws minimal average power to monitor battery parameters [Column 1, lines 40-43]. Miller and Bauer are analogous art because they are from the same field of endeavor of controlling battery temperature. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a plurality of temperature sensors as taught by Bauer inside the battery pack. The motivation for doing so would have been to provide a battery pack which includes electronic circuitry which draws minimal average power to monitor battery parameters [Column 1, lines 40-43].

As per claim 16, Miller discloses a method for controlling a temperature of a battery which is attached to an ultrasound system [Column 2, lines 3-9], comprising the steps of: presetting the relations between said temperature conditions to be set and the stepwise temperature rise suppressing measures of lower to higher levels which are implemented by said ultrasound system [Figure 5, Column 10, lines 5-40]; selecting the temperature rise suppressing measure at the highest stage among the temperature conditions to which the detected temperature at said plurality of locations are corresponding, respectively [Column 9, lines 56-59]. Miller discloses setting different temperature conditions as criteria for determination of temperature rise [Column 4, lines 46-51] however does not expressly disclose doing so for a plurality of locations in said battery. Bauer discloses detecting the temperatures at a plurality of locations in said battery [Figure 2 (67), (77), and Column 4, lines 7-10, 17-18] for the benefit of providing a battery pack which includes electronic circuitry to monitor battery parameters, which electronic circuitry draws minimal average power [Column 1, lines 40-43]. Miller and Bauer are analogous art because they are from the same field of endeavor of controlling battery temperature. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a plurality of temperature sensors as taught by Bauer inside the battery pack. The motivation for doing so would have been to provide a battery pack which includes electronic circuitry which draws minimal average power to monitor battery parameters [Column 1, lines 40-43].

As per claim 2, Miller discloses selecting a predetermined state from a plurality of states to which said ultrasound system can transition, according to the respective

temperatures obtained by a sensor [Column 4, lines 46-51]. Miller does not expressly disclose a CPU for selecting a predetermined state according to temperatures obtained by said first and second sensors. Bauer discloses a plurality of temperature sensors and a CPU inside the battery pack as discussed in the rejection of claim 1 above.

As per claim 3, Miller discloses a first sensor [Column 4, lines 32-33] provided at a location in proximity to a protection circuit for preventing an overcurrent [Column 6, lines 61-67, Column 7, lines 4-13]. Miller does not expressly disclose a second sensor. Bauer discloses a second sensor provided at a location in proximity to the surface of a cover housing said battery [Figure 2 (77), Column 4, lines 17-18] to provide a battery pack which includes electronic circuitry to monitor battery parameters, which electronic circuitry draws minimal average power [Column 1, lines 40-43]. Miller and Bauer are analogous art because they are from the same field of endeavor of controlling battery temperature. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a plurality of temperature sensors as taught by Bauer inside the battery pack. The motivation for doing so would have been to provide a battery pack which includes electronic circuitry which draws minimal average power to monitor battery parameters [Column 1, lines 40-43].

As per claim 4, Miller discloses the action to be implemented by said ultrasound system is selected based on temperature levels indicated by said sensors from a plurality of measures including decreasing the clock frequency of the system unit CPU in the computer system, intermittently operating said system unit CPU, a suspend CPU operation and turning off the power completely [Column 5, lines 29-35, 39-42].

As per claim 11, Miller discloses the electric apparatus, wherein said measure selector determines stepwise temperature rise suppressing measures of lower to higher levels according to the temperature condition of each of the temperatures detected [Column 4, lines 46-51] by said plurality of temperature detectors, and if the temperature detected by at least one temperature detector of said plurality of temperature detectors corresponds to the temperature conditions of a stage at a level higher than the temperature rise suppressing measure of the current stage, it selects the temperature rise suppressing measure of said stage corresponding to said temperature condition Column 9, lines 56-63].

As per claim 14, Miller discloses the ultrasound system, wherein a plurality of types of battery packs can be attached to said system unit [Column 6, lines 65-67, Column 7, lines 1-3], and from said measure selector, a temperature rise suppressing measure is selected under a different temperature condition for reach type of attached battery pack.

As per claim 15, Bauer discloses the electric apparatus, wherein said measure selector is provided in said battery pack [Figure 2(28)], and said electric equipment further includes a transmitter for transmitting information on the temperature rise suppressing measure selected by said measure selector to said system unit from said battery pack [Column 6, lines 20-24, lines 33-38].

As per claim 12, Miller discloses the electric apparatus, wherein said measure selector selects any two or more of a measure for decreasing the clock frequency of the CPU in said system unit, a measure for intermittently operating said CPU, a suspend

measure in the system unit, and a power down measure as stepwise temperature rise suppressing measures [Column 5, lines 29-36, 39-41].

As per claim 13, Miller discloses the electric apparatus, wherein if the temperature detected by all the temperature detectors of plurality of temperature detectors correspond to the temperature conditions of a stage at a level lower than the temperature rise suppressing measure of the current stage, said measure selector selects the temperature rise suppressing measure at the lower level from the current stage [Figure 5].

As per claim 17, Bauer discloses the method of controlling the temperature of a battery, wherein said plurality of locations for which temperature conditions are selected include the proximity of the surface of said battery [Column 4, lines 7-10] and/or the proximity of a protection circuit [Column 4, lines 17-18].

As per claim 18, Miller discloses the method of controlling the temperature of a battery, wherein the relations between said temperature conditions and said temperature rise suppressing measures are preset by table information [Column 9, lines 48-51].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lotfy et al (US Patent no. 5,850,351), discloses a battery management apparatus comprising of a microcomputer with memory and apparatus for bi-directional communication with a central control and voltage and temperature measuring circuits. Piercy (US Patent no. 5,557,188), discloses a smart battery system

capable of monitoring various aspects of charging/discharging, voltage and temperature as a function of the battery itself.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nirav Amin whose telephone number is (571) 272-3821. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on (571) 272-3667. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NA

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